FINAL DECISION RECORD FOR ENVIRONMENTAL ASSESSMENT NM-060-99-031 FOR ALLOTMENT 62083

On September 3, 1999, the Roswell Field Office (RFO) received a protest of the proposed Decision Record to renew the term grazing lease for Allotment 62083 from Forest Guardians. Upon a review of the protest the RFO determined the protest was timely and with standing. Under the provisions of 43 CFR 4160.2 and 4160.3, the Authorized Officer shall review the proposed decision, in light of the protestant's statement of reasons and other pertinent information, and issue a final decision.

This protest also contained references to areas and issues that are outside the jurisdiction of the RFO. These include reference to the stocking rates within the Ladrones Area of Critical Environmental Concern (ACEC); riparian habitat throughout the Taos Field Office; and the requirements of the Multiple Use Sustained Yield Act which the U. S. Forest Service operates under. These issues are not germane to the allotment in question (62083) and will not be considered.

In summary, the protest claims the Bureau of Land Management (BILM) RFO violated the National Environmental Policy Act (NEPA), the Federal Land Policy and Management Act (FLPMA), the Clean Water Act (CWA) and the fundamentals of rangeland health as outlined in 43 CFR 4180. 1. The Protestor asks that BLM discard the proposed decision; begin the process to prepare an environmental impact statement to address permit and lease renewals for this and other allotments; and not permit livestock grazing on this allotment until the process is complete.

Under Section 11 of the protest, the Protestor made five claims that are broad in scope and lack specificity to this Environmental Analysis and Proposed Decision Record. These include:

1. The protest claims that BILM violated NEPA by not preparing an EIS to determine lands where livestock grazing is suitable. To support this claim, the protest makes several supporting statements. These include:

> "Because neither 43 CFR 4110. 1 - 1, nor any existing land use plan dictate whether or how much livestock grazing should be authorized on these lands, [BLM1 Must make its own informed and reasoned determination . . ."
>
> [BLM has] "deliberately refused to consider the most important determinant of grazing's impact on the environment: the number of cattle it would permit to graze."
>
> [BLM has] "refused to open to public review and comment its determination of the number of cattle that will be grazing under the one grazing strategy it analyzed and the basis for its conclusion that this determination would have no significant impact on the environment."
>
> "We simply question whether that data takes into consideration the needs of non-livestock values. Thus, the most important decision for the allotments, the number of cows and the season of use, will be made without any real public scrutiny."

After a review of the Environmental Analysis (EA) and the Proposed Decision Record (DR), the BILM RFO offers the following:

> 43 CFR 4110.1 -1 refers to grazing on lands acquired by BLM. This section of the regulations deals with the qualifications for a grazing permit/lease on acquired lands. The allotment in question here does not contain any acquired lands as defined by this section. This is not germane to this issue.
>
> The statement that no existing land use plan authorizes livestock grazing is in error. The Approved Roswell Resource Management Plan (RMP) (October 1997) carried forward the determination the public lands are suitable for livestock grazing (See page 30 and Appendix 8). Both the East Roswell Environmental Impact Statement (11979) and the West Roswell Management Framework Plan (MFP) (1984) analyzed livestock grazing on the public lands within the RFO and determined that the overall level of livestock grazing is consistent with the resource values. Futhermore, the RMP provides for the level of

permitted use within an allotment to be adjusted (either an increase or decrease) based on monitoring data.

The determination that the public lands were suitable for livestock grazing was made in the East Roswell EIS and the West Roswell Management Framework Plan (MFP). Further, the MFP and EIS analyzed the impacts of livestock numbers and the effects of grazing on the public lands; these documents also analyzed a range of alternatives, including the elimination of grazing. Both the earlier documents and the subsequent RMP that replaced it were subject public review and comment. It is a matter of record that the Protestor commented on the Draft RMP and protested the Proposed RMP decisions.

Prior to developing the EAs for the permit/lease renewals, the RFO held five public scoping meetings in July 1998. Between July 1998 and May 1999, RFO periodically published a newsletter that tracked the progress of the permit/lease renewal process and progress on the EA development, and that discussed issues concerning the permit/lease renewals. Copies of this newsletter were sent to the Protestor. The Protestor states that g i g determinations will be made without public scrutiny and this is not born out by the record.

2. The protest claims that BLM violated NEPA by failing to address stocking rates as the most significant factor of impacts on resources. In support of this claim, the protest makes the following supporting statements:

"[the EA] fails to evaluate the most relevant factor of all: the number of cattle to be permitted to graze."

"it is self-evident, however, that the approximate locations and numbers of cattle permitted on the allotments .... is the most significant factor in determining the environmental effects of grazing."

After a review of the Environmental Analysis (EA) and the Proposed Decision Record (DR), the BLM RFO offers the following:

The EA is specific to the allotment it analyzes and does state the permitted livestock numbers allowed to graze within the allotment. Allotment specific analysis of livestock grazing and permitted livestock numbers show that the location of the livestock is within the allotment boundaries.

The level of permitted use for this allotment (62083) is stated on page 3 of the EA under the Proposed Action and is as follows:

1 Animal Unit (AU) yearlong for 8 Animal Unit Months (AUMs) at 100% Public Land

The original determinations of stocking rates and suitability for year-long grazing were made in the East Roswell Grazing EIS and the Roswell MFP Amendment/EIS. The Roswell RMP carried forward those determinations and the EA is tiered off the RMP. This tiering is permitted by NEPA and allows an agency to analyze impacts.

3. The protest claims that BLIVI violated NEPA when it did not prepare an EA that analyzes a wide range of stocking rates. To support this claim, the protest makes several supporting statements.

"Having failed to consider alternative stocking rates, which is clearly 'necessary to permit a reasoned choice/ The BLM's proposed decision must be withdrawn and a new analysis issued."

" . . . BLM must consider a reasonable range of alternatives, including a no action alternative."

After a review of the Environmental Analysis (EA) and the Proposed Decision Record (DR), the BLIVI RFO offers the following:

Since grazing suitability has been determined and alternatives have been analyzed in previous land use planning documents to which these EAs are tiered, RFO has already met the requirement of analyzing a range of alternatives necessary to permit a reasoned choice. Further, given the conditions of the allotment in question, RFO contends it has already considered a reasonable range of alternatives in the EA, based on the existing conditions, issues and conflicts within this allotment. It is not necessary to consider reducing the

permitted number of livestock if the reduction is not germane to existing conditions.

The NEPA process does not require voluminous information and time consuming analysis of alternatives that would not be feasible to implement. NEPA requires that a range of reasonable alternatives be considered. The elimination of grazing was considered as an alternative. The fact that livestock grazing already has been shown to be an appropriate use of the public lands coupled with the economic, social and resource management effects narrows the need of detailed analysis of alternatives presented in the EA.

The Proposed Action as presented in the permit/lease renewal EA for this allotment does provide for the elimination of grazing should this area be developed as a day-use recreational area in the future. The elimination of livestock grazing would follow the procedures outlined in 43 CFR 4110.4-2(b).

4. The protest claims that BLIVI violated NEPA when it did not prepare an EIS for significant and connected actions. To support this claim, the protest makes this statement:

"The EIS must evaluate the actual environmental effects of particular grazing permits in specific areas ... and must include the detailed analysis of local geographic conditions necessary for the decisionmaker to determine what course of action is appropriate under circumstances."

After a review of the Environmental Analysis (EA) and the Proposed Decision Record (DR), the BLIVI RFO offers the following:

In addition to the responses to the previous claims, NEPA allows for the development of an EA analyzing the impacts resulting from the proposed action. With a finding of no significant impacts, preparing an EIS is not necessary. The protest presents no facts or evidence that this finding is in error. The protest does not support this claim.

5. The protest claims that the cumulative impact analysis is inadequate. To support this claim the protest makes these statements:

"it [BLMI must analyze the cumulative effects of 100 years or more of livestock grazing on the allotment and other allotments for which NEPA analysis is concurrently conducted."

"BLM does not *even* [emphasis added] provide a cursory discussion of the cumulative impacts of the action on riparian systems, it does not *even* [emphasis added] mention the cumulative effect of livestock grazing on riparian habitats in the Taos Field Office. Even if cumulative effects are difficult to assess they can not be dismissed."

After a review of the Environmental Analysis (EA) and the Proposed Decision Record (DR), the BLM RFO offers the following:

The EA in this case contains more than a cursory statement regarding cumulative impacts, acknowledge livestock grazing has occurred on this and other allotments during the past century, and attempts to describe the same impacts on the surrounding allotments. See page 5, 9, 10, 17 and 18 of the EA for reference and discussion of the cumulative impacts resulting from this proposed action.

Here again, the protest fails to be specific. There are general statements, strung together without specific comments on the substance of the EA.

Under Section III, the protest claims RFO fails to analyze a no grazing alternative as well as a range of alternatives with varying stocking rates and, therefore, BLM violates FLPMA by failing to choose a level of grazing that will best meet the present and future needs of the American people.

To support this claim, the protest states:

" . . the BLM must consider that there are hundreds of millions of acres of both private and public lands in the nation that provide better forage for cattle than do the arid and rolling hills. But resources on BILM

lands such as habitat for desert bighorn, elk, deer, and antelope, and the cottonwood-willow forests and its many threatened, endangered species are incredibly scarce."

"There is no question that livestock grazing has permanently degraded the productivity of our riparian zones, native fisheries, grasslands and forests. The proposed decisions to approve the permits in question fail to recognize this prohibition and will continue to impair the long-term productivity of riparian areas."

After a review of the Environmental Analysis (EA) and the Proposed Decision Record (DR), the BLM RFO offers the following:

FLPMA requires BLM to protect resources on public lands while simultaneously making some of those resources available for use. RFO has attempted to strike that balance required by FLPMA by fulfilling the requirements of NEPA. Other than the general statements cited here, the protest presents no evidence or data that RFO is in error.

In regards to Threatened and Endangered (T&E) species, RFO has consulted with the US Fish & Wildlife Service, resulting in a no jeopardy opinion on the RMP (See the Biological Opinion of the Roswell RMP (Cons. #2-22-96-F-102, May 1997); letter from USFWS to RFO, dated April 1998). In the case of the current permit/lease renewal process, allotments were grouped by community type (ie Grassland, Mixed Desert Shrub, Shinnery Oak Dune, Pinon-Juniper or Riparian) for consultation with the US Fish & Wildlife Service.

While the RFO disagrees with the assertion that livestock grazing has permanently impaired the productivity of the riparian areas and associated uplands in question, the Protestor offered no monitoring data or other information for consideration. The protest fails to support the claim that the RFO is in error in issuing a decision to renew this permit/lease.

Under Section IV, the protest states the proposed decisions are contrary to the Clean Water Act. To support this claim, the protest makes the following supporting statements:

"The Clean Water Act requires the Forest Service to ensure that the proposed livestock grazing allotment will not cause or contribute to violations of water quality standards associated [with] perennial and ephemeral stream."

"Livestock can and does degrade water quality by increasing the levels of pollutants including fecal coliform, bacteria, suspended solids, dissolved solids, and biological oxygen demand."

"These EAs and proposed decisions currently fail to meet legally binding agreement by failing to identify Best Management Practices to ensure compliance with state and federal water quality laws."

". . BLM must seek and obtain certification form the State of New Mexico under section 401 of the Clean Water Act before granting a permit to allow grazing primarily because of the known impacts of grazing on riparian, wetland, or other ecologically sensitive water resource areas."

"Moreover, state and federal regulations include an 'antidegradation' requirement, mandating that water quality must protect existing uses of surface water ... BLM has absolutely no data concerning how severely water quality is being degraded on this allotment, it cannot possible guarantee that BLM's actions is approving continued riparian grazing will not violate the antidegradation standards of federal and state law."

After a review of the Environmental Analysis (EA) and the Proposed Decision Record (DR), the BLM RFO offers the following:

While the impacts described in the protest do occur in some places, the question addressed in this EA was whether issuing a livestock grazing permit on the allotment would result in water quality impacts. The EA discussed this at length, presenting information recently published by the State of New Mexico to support the conclusion that livestock grazing along the Pecos River does not have a significant effect on water

quality. See page 8 of the EA for allotment 62083.

The Protestor is correct the BLM has entered into an MOU with the State of New Mexico (MOU NM-355) to control nonpoint source pollution, and that the BLM will include best management practices (BMPs) to help meet the purpose of the MOU. The fact that BMPs are not listed as such in the EA does not mean, however, that BMPs have not been included in the EA. A formal list of BMPs in the EA would not have affected the rationale behind the decisions to issue a grazing permit or lease. Therefore, this point does not require the decision to be reconsidered.

The protest claims that the RFO must acquire water quality certification from the State of New Mexico under Section 401 of the Clean Water Act, prior to authorizing livestock grazing. This question has been argued in various courts, but a 1996 Oregon District Court's ruling is the only decision which agreed with the protest's opinion. That decision only applied to Forest Service allotments in that district and was reversed on appeal. The RFO has consulted the State of New Mexico twice on this specific question. In both instances the state informed the RFO that 401 certification is not required for grazing authorization in New Mexico.

The protest's implication that the RFO has violated the Stat''s antidegradation policy is incorrect because there will be no significant effect on water quality due to issuance of the grazing permits on the subject allotment. The protest's claim that the RFO had "absolutely no data concerning how severely water quality is being degraded on this allotment" has no basis. The rationale for the RFO's conclusion that water quality would not be significantly affected is included in the EA and literature citations are provided for the documents containing water quality information for this specific area.

V. The protest claims that the fundamentals of rangeland health have been violated.

The protest asserts:

> "We also believe the [proposed] decisions fails to comply with the fundamentals of rangeland health . . . because of the poor condition of the riparian habitat and the decision to allocate 99% of the forage to cattle, thereby causing harm to the state endangered desert bighorn, we believe the decision violates to the fundamentals of rangeland health."
>
> "Sensitive species in both riparian and upland areas are not being adequately protected. In addition, water quality, watersheds are not being adequately protected."

After a review of the Environmental Analysis (EA) and the Proposed Decision Record (DR), the BLM RFO offers the following:

The protest does not offer any data or other information (other than belief) that could lead RFO to re-examine the documents for violations of the fundamentals of rangeland health.

Desert bighorn does not habituate the allotments within RFO boundaries and, therefore, the reference to the species is irrelevant. The monitoring and allotment evaluation methodologies and procedures used by the RFO preclude the allocation of forage in excess of 45 percent of the available forage to livestock grazing. Therefore the claim that the RFO allocates 99 percent of the forage to livestock is in error.

The protest does not define poor condition in the light of the data presented in the EA. Similarly, the protest does not define adequate protection. Neither does the protest provide data nor specific information that would lead RFO to conclude it had erred in some manner.

After an extensive review of the protest and the EA analyzing the impacts of renewing the term grazing permit/lease, the RFO concludes the protest from the Protestor does not show that the RFO erred in the preparation of the EA, either in process of public involvement or the analyses of the impacts. Therefore the Final Decision in this matter is to:

Offer a ten-year livestock grazing lease for public lands on Allotment 62083 to Mr. Gerald Don Cortese as

described in the Proposed Action of Environmental Assessment NM-060-99-031 (EA). Permitted use will be as follows:

1 Animal Unit (AU) from 03/01 to 02/28 at 100% Public Land for 8 Animal Unit Months (AUMs)

An AU is equivalent to 1 cow. The term of the offered lease is from November 1, 1999 to February 28, 2009.

If action is taken in the future to develop the BLM land on Allotment 62083 as a day-use recreation area, Mr. Cortese will be given a two years notice in accordance with the procedures outlined in 43 CFR 4110.4-2(b) that the public lands would be devoted to other uses that will preclude grazing.

Through the Rangeland Reform '94 initiative, the BLM developed new regulations for grazing administration on public lands. With public involvement, fundamentals of rangeland health were established and written into the new regulations. The fundamentals of rangeland health are identified in 43 CFR §4180.1, and pertain to (1) watershed function; (2) ecological processes; (3) water quality; and (4) habitat for threatened, endangered, and other special status species. Based on available data and professional judgement presented in the EA, the fundamentals of rangeland health exist on Allotment 62083.

Pursuant to the provisions of 43 CFR 4.21, 4.470 and 4160.4 you are allowed 30 days from the receipt of this Final Decision in which to file an appeal to the Field Office Manager for the purpose of a hearing before an Administrative Law Judge. Your appeal must state clearly and concisely in writing the reason(s) why you think the final decision is in error.

To receive consideration for staying the implementation of this decision, you must specify how you would be harmed if the stay were not granted. If a petition for stay is not granted the decision will be put into effect following the 30 appeal period. Appeals can be filed at the following address:

Field Office Manager
Bureau of Land Management
Roswell Field Office
2909 West Second Street
Roswell, NM 88201

Signed by Edwin L. Roberson
Field Manager

10/28/99
Date

FINDING OF NO SIGNIFICANT IMPACT/RATIONALE

FINDING OF NO SIGNIFICANT IMPACT: I have reviewed this environmental assessment including the explanation and resolution of any potentially significant environmental impacts. I have determined that the proposed action will not have significant impacts on the human environment and that preparation of an Environmental Impact Statement (EIS) is not required.

Rationale for Recommendations: The proposed action would not result in any undue or unnecessary environmental degradation. The proposed action will be in compliance with the Roswell Resource Management Plan and Record of Decision (October, 1997).

Signed by T. R Kreager 11/23/98
Assistant Field Manager Date

ENVIRONMENTAL ASSESSMENT
for

Section 15
GRAZING AUTHORIZATION
on
ALLOTMENT 62083

Township 2 North, Range 26 East
Sections 26, 35 (part)

EA-NM-060-99-031

October 1998

U.S. Department of the Interior
Bureau of Land Management
Roswell Field Office
Roswell, New Mexico

I. BACKGROUND

A. Introduction

When authorizing livestock grazing on public range, the Bureau of Land Management (BLM) has historically relied on a land use plan and environmental impact statement to comply with the National Environmental Policy Act (NEPA). A recent decision by the Interior Board of Land Appeals, however, affirmed that the BLM must conduct a site-specific NEPA analysis before issuing a permit or lease to authorize livestock grazing. This environmental assessment fulfills the NEPA requirement by providing the necessary site-specific analysis of the effects of issuing a new grazing permit on Allotment 62083.

The scope of this environmental assessment is limited to the effects of issuing a new grazing permit on Allotment 62083. Over time, the need could arise for subsequent management activities which relate to grazing authorization. These activities could include vegetation treatments (e.g., prescribed fires, herbicide projects), range improvement projects (e.g., fences, water developments), and others. Future rangeland management actions related to livestock grazing would be addressed in project-specific NEPA documents as they are proposed.

Though this environmental assessment specifically addresses the impacts of issuing a grazing permit on Allotment 62083, it does so within the context of overall BLM management goals. Allotment management activities would have to be coordinated with projects intended to achieve those other goals. For example, a vegetation treatment designed to enhance watershed condition or wildlife habitat may require rest from livestock grazing for one or more growing seasons. Requirements of this type would be written into the permit as terms and conditions.

B. Purpose And Need For The Proposed Action

The purpose of issuing a new grazing permit would be to authorize livestock grazing on public range on Allotment 652083. The permit would be needed to specify the types and levels of use authorized, and the terms and conditions of the authorization pursuant to 43 CFR §§4130.3, 4130.3-1, and 4130.3-2.

C. Conformance With Land Use Planning

The proposed action conforms with the Roswell Approved Resource Management Plan (RMP) and Record of Decision (BLM 1997) as required by 43 CFR 1610.5-3.

D. Relationships to Statutes, Regulations, or Other Plans

The proposed action and alternatives are consistent with the Federal Land Policy and Management Act of 1976 (43 U.S.C. 1700 et seq.); the Taylor Grazing Act of 1934 (43 U.S.C. 315 et seq.), as amended; the Clean Water Act (33 U.S.C. 1251 et seq.), as amended; the Endangered Species Act (16 U.S.C. 1535 et seq.) as amended; the Public Rangelands Improvement Act of 1978 (43 U.S.C. 1901 et seq.); Executive Order 11988, Floodplain Management; and Executive Order 11990, Protection of Wetlands.

II. PROPOSED ACTION AND ALTERNATIVES

A. Proposed Action

The proposed action is to issue Mr. Gerald Don Cortese a ten-year permit beginning March 1, 1999 to graze cattle on Allotment 62083. Permitted use would be based on a 1994 grazing lease that authorizes yearlong grazing of one animal unit (AU), which corresponds to eight animal unit months (AUMs).' If action is taken in the future to develop the site as a day-use recreation area, Mr. Cortese would be given at least two years notice that the grazing lease would be amended or terminated.

Under the proposed action current management of the allotment would continue as described above. There would be basically no change to livestock management or to existing range improvements already in place.

B. No Grazing Permit Alternative

Under this alternative a new grazing permit would not be issued for Allotment 62083. No grazing would be authorized on federal land on this allotment.

III. AFFECTED ENVIRONMENT AND ENVIRONMENTAL IMPACTS

A. General Setting

Allotment 62083 is in DeBaca County, 8 miles south of Fort Sumner via State Road 272 which crosses and provides access to the 80-acre public land parcel of the allotment. The Pecos River flows through a narrow alluvial valley in the north and east portion of the allotment. The 80-acre public land parcel is landlocked by private land.

Allotment 62083 is considered a riparian allotment because the Pecos River crosses the public land parcel (about .3 miles). Riparian areas are directly influenced by permanent free water, whether at the surface or in the subsurface. Compared to adjacent upland sites, the riparian area has a greater amount and diversity of vegetation. The diversity of plant species and availability of water makes riparian areas prime wildlife habitat.

Other uses of the parcel include recreational acivities such as hunting, fishing and wildlife viewing. In the mid-1 960's, DeBaca County applied for and was granted a Recreational and Public Purposes (R&PP) patent for the 80-acre public land parcel. The land was to be used by the City of Fort Sumner for a padL The park was never constructed and the land reverted back to the federal government in 1977. Mr. Cortese applied for, and was granted, a grazing lease in 1978. The lease does not include approximately 4.5 acres east of State Road 272.

1 For a cattle operation, an animal unit (AU) is defined as one cow with a nursing calf or its equivalent. An animal unit month (AUM) is the amount of forage needed to sustain that cow and calf for one month.

B. Affected Resources

The following resources or values are not piresent or would not be affected by the authorization of livestock grazing on Allotment 62083: Areas of Critical Environmental Concern, Cultural Resources, Native American Religious Concerns, Prime or Unique Farmland, Minority/Low Income Populations, Hbzardous or Solid Wastes, Wild and Scenic Rivers, and Wilderness. Affected resources and the impacts resulting from livestock grazing are described only for public lands in the Upper River East Pasture.

1. Livestock Management

Affected Environment

The allotment is outside of the Roswell Grazing District Boundary and is classified as a Section 15 Grazing Lease (Taylor Grazing Act). These parcels cannot be efficiently administered by the BLM as with larger well-blocked public lands found within the grazing district boundary. Normally, the permitted use on a Section 15 Lease is established by the amount of forage produced on the public bWs within the lease, in this case about 75 acres.

The allotment was placed in the "C" category based on monitoring studies. A C-category allotment indicates range condition is stable, there is a low potential for range improvement, benefit-cost analysis for range improvements is not favorable, trend is stable, there is less than 30% public land and 1540 acres or less public land, and there are no significant resource conflicts.

The allotment consists of the Upper River Eastand Upper River West pasture (see map). Upper River East contains approximately 75 acres of federal land. The previous permit authorized one Animal Unit (AU) yearlong. The overall livestock numbers on the allotment are not established by the BLM. About 3 to 4 head of cattle are run in the Upper River East Pasture from July through October (first rain through first frost).

Existing range improvements for the manago nent of livestock include pasture and boundary fences. The majority of.the range improvements are privately owned. There are no developed livestock waters, salting or feeding sites in the pasture. Cattle depend on the Pecos River as a water source. Occasionally, cattle move off the allotment when river gaps are washed out during high flow periods (dam releases) or flood events.

Goldenrod, a poisonous plant to cattle during the dormant season (frost to greenup), is found in scattered areas in the bottomlands. Typically, livestock operators will remove cattle during this time to prevent poisoning. Goldenrod was aerially treated by the permittee in 1997 and 1998.

Environmental Impacts

Under the Proposed Action, livestock would continue to graze public lands within the allotment. Existing pasture configurations and water sources would remain the same.

Under Alternative B, there would be no livestock grazing authorized on public lands. The public

lands would have to be fenced apart from the private lands or livestock would be considered in trespass if found grazing on public lands (43 CFR 4140.1(b)(1)). The expense of fencing would be borne by the private landowner. Range improvements on public land would not be maintained.

Cumulative impacts of the grazing and no grazing alternatives were analyzed in Rangeland Reform '94 Draft Environmental Impact Statement (BLM and USDA Forest Service 1994) and in the Roswell Resource Area Draft RMPIEIS (BLM 1994). The no livestock grazing alternative was not selected in either document.

2. Vegetation

Affected Environment

River East Pasture is comprised of typical floodplain vegetation including the Riparian/Wetland vegetation community type. Riparian areas are found along the 1.5 miles of the Pecos River in the pasture. The floodplain width is narrow. The riparian vegetation community is tied to landform within the floodplain and is influenced by flooding intervals. The land form is comprised of exposed and stabilized river bars, the floodplain, and terraces.

The river channel is moderately entrenched and slightly confined by the valley. Channel banks are relatively stable. This is most likely due to entrenchment of the channel rather than disturbance associated with land use activities. The channel material is primarily a sand/gravel bed with small to medium-sized debris. The stream gradient is relatively flat (0.25 percent).

Riparian vegetation along the river banks include pockets of Baltic rush, threesquare and cattail. Woody vegetation include seepwillow, saltcedar, and Russian olive. The riverbank is dominated primarily by Russian olive growing in strips or dense thickets that overhang into the active river channel. Alkali sacaton, sideoats grama, sandbur and silver bluestern are the more common grass species. Forb species include goldenrod, ragweed and numerous annual and perennial forbs. Mature cottonwood trees with open canopies are found along the higher margins of the floodplain and in small groves within the floodplain.

In 1992, the BLM initiated a standard method to assess the functioning condition of riparian areas (BLM 1993). The method uses an interdisciplinary team to consider the interaction of the vegetation, landform/soils, and hydrology. Assessed areas can be classified as "proper functioning condition, functional at risk (upward or downward trend) and nonfunctional."

Riparian areas are functioning properly when adequate vegetation, landform, or large woody debris is present to dissipate stream energy associated with high water flows, thereby reducing erosion and improving water quality; filter sediment, capture bedload, and aid floodplain development; improve flood-water retention and ground-water recharge; develop root masses that stabilize streambanks against cutting action; develop diverse ponding and channel characteristics to provide the habitat and water depth, duration, and temperature necessary for fish production, waterfowl breeding, and other uses; and support greater biodiversity. The functioning condition of riparian-wetland areas is a result of interaction among geology, soil, water, and vegetation (BLM 1993).

In October 1998, BLM personnel assessed the riparian area on the allotment. The riparian area on public land was in "proper functioning condition" as defined by the BLM (1993). Livestock were not grazing the riparian area during the BLM assessment, and cow trailing and reductions in riparian vegetation were not observed.

Environmental Impacts

Under the Proposed Action, livestock utilization of the floodplain and associated riparian areas along the Pecos River would continue on a seasonal basis. Vegetation impacts may be noticeable at livestock concentration areas such as crossings, shaded areas along the river and accessible banks and terraces. Some bank sloughing may occur from trampling.

Regeneration of cottonwood trees may be hindered by livestock browsing on seedlings. Utilization of vegetation preferred as forage would be light within the floodplain and along the river.

The floodplain and associated riparian vegetation would be afforded protection from overutilization by livestock due to the low stocking numbers and seasonal use of the pasture. Reduction of exotic species in concert with seasonal livestock use along the river would improve the overall health of the floodplain and riparian areas.

Under Alternative B, floodplain and riparian vegetation condition would moderately improve. Improvement would continue to be limited by reductions in flood flows, and existing exotic species that affect plant composition. Grasses would initially increase but plant vigor could decline from lack of vegetation removal, making ground cover species rank. Since livestock grazing would not be permitted under Alternative B, range improvement projects such as brush control and exotic species control would be less likely to be implemented through the range program.

3. Soils

Affected Environment

The Soil Survey of De Baca County, New Mexico (USDA Soil Conservation Service 1983) was used to describe and analyze impacts to soils. Soils on the allotment are divided between three map units. The Berwolf-Chispa-Armesa association is found on the uplands west of the Pecos River, and the Ima-Gallen association is on the slopes below the uplands.

Ustifluvents cover the greatest area of the allotment and receive most of the grazing. These deep, alluvial soils are located on the floodplain and low terraces along both sides of the the river. The surface layer is a fine sandy loam about 12 inches thick. The hazard of water erosion is high, and the hazard of wind erosion can be high. The dense vegetation currently covering the soil would minimize the risk of erosion on the allotment.

Ecological site descriptions serve as the basis for range trend analysis. The entire allotment is within a Bottomland CP-2 site, which is well suited to livestock grazing if properly managed.

Environmental Imgacts

Under the Proposed Action livestock would remove some of the cover of standing vegetation and litter, and compact the soil by trampling. If livestock management were inadequate, these effects could be severe enough to reduce infiltration rates and increase runoff, leading to greater water erosion and soil losses (Moore et al. 1979, Stoddart et al. 1975).

At the current level of use, however, adequate vegetation is maintained to protect the soils from erosion and compaction. Ongoing rangeland monitoring would also help ensure an adequate vegetative cover by indicating when and where changes are needed to livestock management.

Under the No-Grazing Alternative, any risk of overgrazing would be eliminated. However, removing grazing animals from an area where they were a natural part of the landscape could result in poor use of precipitation and inefficient mineral cycling (Savory 1988). Bare soil could be sealed by raindrop impact, and vegetation could become decadent, inhibiting new growth. Therefore, the results of no grazing could be similar to those of overgrazing in some respects.

4. **Water Quality**

Affected Environment - Surface Water

The allotment straddles approximately one third of a mile of the Pecos River. Nomajor tributaries cross the allotment, but numerous smal draws drain the uplands to the west. This portion of the river is in the reach from Salt Creek to Sumner Dam, which is identified as Segment 2207 by the New Mexico Water Quality Commission (WQCC).

Under the authority of the Federal Clean Water Act, the WQCC (1995) designated uses for streams in New Mexico. Designated uses for Segment 2207 include fish culture, irrigation, a limited warmwater fishery, livestock watering, wildlife habitat, and secondary contact (e.g., wading).

The WOCC (1995) also established water quality standards to protect the designated uses, and directs periodic water quality assessment to ensure that standards are met. According to the New Mexico Environment Department (NMED), Segment 2207 is currently meeting the standards for all its designated, uses (Hogge 1998, NMED 1998a).

Environmental Impacts - Surface Water

In general, livestock grazing is considered a potential cause of nonpoint source pollution, with sediment as the primary contaminant. Livestock grazing on the allotment, however, is not expected to be a significant cause of sedimerd loading to the Pecos River under either management alternative.

The NMED conducted an intensive assessment of Pecos River water quality in 1997. They concluded that no water quality standards have been exceeded in the past ten years on Segment 2207 (NMED 1998a).

The NMED assessment also considered siltation and stream bottom deposits in evaluating impacts to the threatened Pecos bluntnose shiner and its habitat. The NMED cites a letter from

the U.S. Fish and Wildlife Service, (USFWS) that sediment conditions alone are not significant contributing factors in the ability of the bluntnose shiner to survive and reproduce. Instead, upriver reservoirs have trapped sediment and resulted in water exiting the reservoirs that is "starved of sediment." Therefore, sediment loading due to livestock grazing on the allotment would not be expected to significantly affect water quality under either alternative.

Cumulative impacts to Pecos River water quality from grazing on Allotment 62083 would not be expected to be significant. The intensive assessment of the Pecos River by the NMED also included Segment 2206 (Salt Creek to Rio Pehasco) immediately downstream of Segment 2207. Potential sources of pollutants in Segments 2206 and 2207 include rangelands, irrigation return flows, dairies, municipal and industrial sources, mineral development, and road construction and maintenance. Even considering all these potential pollution sources, neither segment had a documented exceedance of any water quality standard.

Affected Environment - Ground Water

The allotment lies within the Fort Sumner Underground Water Basin (New Mexico State Engineer 1995). Ground water is found in the alluvium at depths ranging from less than 10 feet near the river, to more than 80 feet in the uplands (Wilkins and Garcia 1995, Hudson and Borton 1983). Yields of 100 gallons per minute or more are possible from the alluvium (Geohydrology Associates, Inc. 1978). Ground-water quality is generally good, though data are limited.

Environmental Impacts - Ground Water

Livestock grazing would not be expected to have a significant impact on ground-water quality. Livestock would be dispersed over the allotment, and the soil would filter potential contaminants. Cumulative impacts to ground-water quality from grazing on Allotment 62083 would be negligible.

The WQCC has the primary responsibility for ground-water quality management in New Mexico. In their most recent report on water quality in New Mexico, the WQCC (1994) did not find livestock grazing on rangelands to be an important potential source of contamination to ground water.

Wilson (1981) also presented potential sources of ground-water contamination and the relative vulnerability of aquifers in New Mexico. He identified animal confinement facilities (e.g., dairies, feedlots) as potential sources of contamination elsewhere in New Mexico, including areas in the Pecos valley downstream from the allotment. Wilson did not identify livestock grazing on rangelands, however, as an important potential source of ground-water contamination.

5. Floodplains

Affected Environment

The properties of any stream or river are due to the interaction of its channel geometry, streamflows, sediment load, channel materials, and valley characteristics (Rosgen 1996). The form and fluvial processes of the Pecos River have been modified by the construction of dams,

which have drastically altered the regimes of the river. Sumner Dam, about 30 river miles upstream from the allotment, is the primary control on this segment of the river. Flooding is less frequent and less severe than prior to dam construction, and sediment loads have been greatly reduced. As a result, the channel has become moderately entrenched, and exhibits much less lateral migration.

Flow regulation with the dams has also changed the extent, character, and condition of the riparian area on the river (Durkin et al. 1994). Sediment deposition on floodplains; is important for riparian succession, and seasonal flooding is required for obligate riparian vegetation.

For administrative purposes, the 100-year floodplain provides the basis for floodplain management on public lands. The 1 00-year floodplain has not been mapped for De Baca County, but extrapolating from downstream, the floodplain is expected to be approximately one mile wide near the allotment. The 80 acres of public range would be inundated during the 100-year flood. Current development on the floodplain consists of about one quarter mile of surfaced road and five miles of interior and boundary fences.

Environmental Impacts

The reduction in the frequency and magnitude of peak flows on the river would continue to be the primary influence on floodplain function. Whether or not grazing is authorized would have little influence on floodplain function beyond the effects of flow regulation. Cumulative effects to floodplain function would be negligible under either alternative.

Changes to the level of development on the Pecos floodplain under the Proposed Action would not be expected. Roads and fences would continue to be used and maintained.

6. Wildlife

Affected Environment

The allotment provides a variety of habitat types for terrestrial and aquatic wildlife species. The diversity and abundance of wildlife species in the area is due to the presence of open water, the numerous irrigated croplands, upland habitat adjacent to the Pecos floodplain, a mixture of grassland habitat and riparian vegetation found within the floodplain of the river.

Numerous avian species use the Pecos River during spring and fall migration, including nongame migratory birds. Common bird species are mourning dove, mockingbird, whitecrowned sparrow, black-throated sparrow, blue grosbeak, northern oriole, western meadowlark, Crissal thrasher, western kingbird, northern flicker, common nighthawk, loggerhead shrike, and roadrunner. Raptors include northern harrier, Swainson's hawk, American kestrel, and occasionally golden eagle and ferruginous hawk.

The Pecos River once supported a wide variety of native fish species adapted to the flow regime that existed prior to dam construction, agriculture development, and the introduction of non-native fish species. The greatest impact to fish habitat is the manipulation of water supply to meet irrigation needs. Representative fish species include the red shiner, sand shiner, Arkansas River shiner, Pecos bluntnose shiner, plains minnow, silvery minnow, plains killifish,

mosquitofish, speckled chub, river carpsucker and channel catfish.

Common mammal species using the area include mule deer, coyote, gray fox, bobcat, striped skunk, porcupine, racoon, badger, jackrabbit, cottontail, white-footed mouse, deer mouse, grasshopper mouse, kangaroo rat, spotted ground squirrel, and woodrat.

A variety of herptiles occur in the area such as yellow mud turtle, box turtle, eastern fence lizard, side-blotched lizard, horned lizard, whiptail, hognose snake, coachwhip, gopher snake, rattlesnake, and spadefoot toad.

Environmental Impacts

Under the Proposed Action, livestock grazing would not impact wildlife habitat due to the low stocking rate and seasonal use of the pasture. Vegetation that provides forage, browse, and cover for a variety of wildlife species would not be over-utilized. Continuing current grazing practices would not produce a gradual decline in wildlife and habitat diversity.

Under Alternative B, wildlife habitat would moderately improve. Livestock would no longer compete directly with wildlife for forage, browse and cover. Improvement would continue to be limited by invasive species (e.g., salt cedar, Russian olive), which affect plant composition. New range improvement projects that could benefit wildlife habitat, such as exotic species control, may not be implemented because these projects are primarily driven and funded through the range program.

7. Threatened and Endangered Species

The Pecos bluntnose shiner, Pecos gambusia and interior least tern are federally listed species that occur or have the potential to occur on the allotment. Federally proposed species include the Pecos pupfish and Pecos sunflower. The status and presence of these species in the RFO area are discussed in the following section.

Pecos Bluntnose Shiner (Notropis simus *pecosensis)* - Federal Threatened

Affected Environment

Historically, the Pecos bluntnose shiner inhabited the Pecos River from Santa Rosa to near Carlsbad, New Mexico. Currently, the subspecies is restricted to the river from the

Fort Sumner area southward locally to the vicinity of Artesia, and seasonally in Brantley Reservoir (NMDGF 1988; USFWS 1992). Routine fish community monitoring conducted by the USFWS in the Pecos River between Sumner Dam and Brantley Reservoir show the fish remains generally abundant, especially in light of cooperative efforts between the Bureau of Reclamation and the USFWS to more closely mimic natural flows in the Pecos River.

There are two designated critical habitat areas on the Pecos River within the RFO area. The first is a 64-mile reach beginning about ten miles south of Fort Sumner (Township 1 North), downstream to a point about twelve miles south of the DeBaca/Chaves county line (Township 5 South). The public land parcel in Allotment 62083 is located approximately 1 mile upstream

from this reach. The second reach is from Highway 31 east of Hagerman (Township 14 South), south to Highway 82 east of Artesia (Township 17 South).

The primary threat to the Pecos bluntnose shiner appears to be the manipulation of flows in the Pecos River to meet irrigation needs, and the subsequent drying of the river channel (Hatch et al. 1985). High flows in late winter-early spring before natural spring runoff appear to displace fish into marginal downstream habitats, including Brantley Reservoir. Cessation of reservoir releases after spring runoff and before the advent of summer rains desiccates long stretches of the Pecos River. Maintenance of water levels within the Pecos River and its tributaries is beyond the management authority of the BLIVI.

In addition to the manipulation of flows is the threat posed by non-native fish. The introduction and establishment of species such as the Arkansas River shiner offers direct competition with the Pecos bluntnose shiner.

Livestock grazing does not appear to be a threat to the bluntnose shiner based on a review of the literature. Nor was grazing identified in the Pecos Bluntnose Shiner Recovery Plan as having the potential to adversely affect water quality, and thus the bluntnose shiner (USFWS 1992).

Environmental Impacts

Under the Proposed Action or Alternative B, livestock grazing **impacts to the Pecos** bluntnose shiner would be negligible. Under Alternative C, no impacts from livestock grazing would occur. Based on the assessment of Pecos River water quality conducted by the NMED in 1997, it appears that the shiner would not be affected by poor water quality if a grazing permit were issued.

Section 303(d) of the federal Clean Water Act requires that the State identify those waters for which existing required pollution controls are not stringent enough to meet State water quality control standards. The State must then establish total maximum daily loads (TMDLs) for pollutants of these water-quality-limited stream segments.' The presence of critical habitat for the threatened Pecos bluntnose shiner raised the Pecos River to a priority one on the New Mexico 303(d) ranking system.

Segment 2207 (Pecos River from Salt Creek to Sumner Dam) had been listed for TMDL development because of stream bottom deposits. Based on a review of historical data and their survey, however, the NMED (1998a) concluded there was no basis for conducting TMDLs on Segment 2207. The NMED (1998b) removed the segment of the Pecos River from the 1998-2000 303(d) list.

NMED's decision to remove Segment 2207 from the 303(d) list bears directly on the Biological Opinion rendered by the USFWS on the Roswell Resource Management Plan. The USFWS cited the New Mexico Water Quality Control Commision's 305(b) report in their opinion. The report identified siltation, reduction of riparian vegetation, and streambank destabilization as among the probable causes for the Pecos River in the RFO area not supporting its designated use as a warm water fishery, and identified rangeland agriculture as a probable source of the nonsupport. Just as Segment 2207 was removed from the 303(d), the next 305(b) report will no longer list the segment as water qualitylimited (Hogge 1998).

Pecos Gambusia (Gambusia nobilis) - Federal Endangered

Affected Environment

The Pecos gambusia is endemic to the Pecos River Basin in southeastern New Mexico and western Texas. Historically, the species occurred as far north as the Pecos River near Fort Sumner, and south to Fort Stockton, Texas.

2 The TMDL is defined as "the greatest loading or amount of the pollutant that may be introduced into a watercourse or stream reach from all sources without resulting in a violation of water quality standards."

Recent records indicate, however, that its native range is restricted to sinkholes and springs and their outflows on the west side of the Pecos River in Chaves County. In spite of population declines, the species remains locally common in a few areas of suitable habitat. Populations on the BLNWR and the Salt Creek Wilderness Area constitute the key habitat of the species in the RFO area. On the refuge, the gambusia is primarily restricted to springs and sinkholes in the Lake St. Francis Research Natural Area.

Endangerment factors include the loss or alteration of habitat (e.g., periodic dewatering) and introduction of exotic fish species (e.g., mosquitofish). Potential impacts to habitat may also occur from surface disturbing activities at sinkholes or springs and their outflows.

Environmental Impacts

No impacts to the Pecos gambusia would result from livestock grazing under any Alternative. No springs or seeps exist on BLM land within the allotment that would provide yearlong habitat for the gambusia.

Interior Least Tern (Stema antillarum athalassos) - Federal Endangered

Affected Environment

The interior least tern nests on shorelines and sandbars of streams, rivers, lakes, and man-made water impoundments. Records of breeding terns in New Mexico are centered around BLNWR where the species has bred regularly since it was first recorded in 1949. BLNWR is considered "essential" tern breeding habitat in the state. Besides BLNWR, the only known nesting habitat in the RFO area is an alkali flat due north of the refuge on public lands. These are small populations with only a few nesting terns.

Sporadic observations of least terns have been recorded elsewhere in the Pecos River valley. The tern may occur on public lands in Chaves County along the river because suitable nesting habitat is found on sites that are sandy and relatively free of vegetation (i.e., alkali flats). Approximately 44 potential nesting sites are found throughout the RFO area. Other potential habitat sites are saline, alkaline, or gypsiferous playas that occasionally hold water. However, ephemeral playas do not support fish, the main staple for terns.

Specific surveys for nesting least terns have been conducted in potential habitat along the Pecos River and playas. No other nesting terns have been found to date. Nesting habitat on publics

lands have been monitored for the past two years. An apparently successful hatch occurred in year one, but no nesting terns were observed in year two. It is believed that terns may alternate nesting from the refuge to adjacent public lands.

Environmental Impacts

No impacts to the interior least tern would result from livestock grazing under any Alternative due to the low stocking rate and seasonal use of the pasture.

Pecos Pupfish *(Cyprinodon* pecosensis) - Federal Proposed

Affected Environment

The Pecos pupfish is found in a variety of habitats from saline springs and gypsum sinkholes to desert streams with highly fluctuating conditions. Pecos puptish populations are most dense in gypsum sinkholes on BLNWR. The species apparently thrives in these saline waters that support few other fish species. It occasionally occupies fresher waters in the Pecos River, but is uncommon in such habitats. In the river, the pupfish is most often found in backwater areas and side pools that lack sunfish or other predators (NMDGF 1988; Sublette et al. 1990; NIVIDGF 1997). The pupfish also inhabits the Overflow Wetlands Wildlife Habitat Area adjacent to the Bottomless Lakes State Park.

Endangerment factors include habitat loss caused by groundwater pumping and channel alterations, hybridization and/or replacement by the sheepshead minnow, and predation by non-native fish species. Potential impacts to habitat may occur from surface disturbing activities at or near springs or seeps. Other activities that severely impact habitat are not within the purview of the BLIVI, such as transportation and utilization of water associated with agricultural irrigation. Livestock grazing may impact springs or seeps but most of these sites have been protected with exclosures.

Environmental Impacts

Under the Proposed Action livestock grazing impacts to the Pecos pupfish would be negligible. Under Alternative B, no impacts from livestock grazing would occur. Conclusions regarding riverine habitat are based on the same information used for the Pecos bluntnose shiner. Suitable sinkhole or spring habitat does not exist on the allotment.

Pecos (Puzzle) Sunflower (Helianthus paradoxus) - Federal Proposed

Affected Environment

The Pecos sunflower is found along alkaline seeps and cienegas of semi-desert grasslands and short-grass plains (4,000-7,500 ft.). Plant populations are found both in water and where the water table is near the ground surface.

In the RFO area, the sunflower is found in only a few areas outside of the BLNWR. In 1994, a new population was found growing on the margins of Lea Lake and its outflow at Bottomless Lakes State Park. Lloyd's Draw, east of the Pecos River, has the only known Pecos sunflower

population on BLM land. It became evident at this location following a prescribed fire. Potential habitat also occurs on BLM land within the Overflow Wetlands Wildlife Habitat Area.

Potential habitat for the sunflower occurs on the allotment as low lying areas where the water table is near the ground surface. No Pecos sunflower populations have been found on the allotment to date. Endangerment factors include dewatering of riparian or wetland areas where the sunflower is found, surface disturbing activities, and excessive livestock grazing.

Environmental Impacts

Under the Proposed Action and Alternative B, there would be no impacts to the Pecos sunflower, if it occurs in the pasture, due to the low stocking rate and seasonal use of the pasture. Potential habitat would remain in unsuitable condition for the Pecos sunflower due to Russian olive and salt cedar growing at potential riparian sites along the river.

8. Visual Resources Management

Affected Environment

The entire allotment is in a Class III area for visual resources management. In a Class III area, contrasts to the basic elements caused by a management activity may be evident and begin to attract attention in the landscape. The changes, however, should remain subordinate to the existing landscape.

Environmental Impacts

The basic elements of the landscape would not change within the allotment under any management alternative. Potential impacts to visual resources would be analyzed and mitigated as allotment management activities are proposed in the future.

9. Recreation

Affected Environme t

State Road 272 provides the only access to public lands within the allotment via the road right-of way, legal public access is limited. There are no roads or trails within the public land parcel.

The allotment provides habitat for numerous game species including desert mule deer, mourning dove and pheasant. The river is also accessible to the public for fishing or minnow seining but these activities are not very heavy.

The RMP has identified the area for future recreation development. The Billy the Kid Recreation Site will be managed and developed for a day-use area, with emphasis on providing access to the Pecos River and fishing. Development could include trails, picnic sites, roads and interpretive displays. Livestock grazing will be excluded from the developed site.

Environmental Impacts

Under the Proposed Action and Alternative B, no direct negative impacts to recreational activities on public lands would occur. Potential conflicts could arise between recreational pursuits and ranching activities, depending on hunting seasons and livestock use in a given pasture. Vandals could damage range improvements.

Under Alternative B, there would be no conflicts with ranching activities and recreational use on public lands. Success of hunts and nonconsumptive opportunities would remain the same or slightly improve. Vandalism could still occur to range improvements.

10. Air Quality

Affected Environment

The allotment is in a Class 11 area for the Prevention of Significant Deterioration of air quality as defined by the federal Clean Air Act. Class 11 areas allow a moderate amount of air quality degradation.

Air quality in the region is generally good, with winds averaging 10-16 miles per hour depending on the season. Peak velocities reach more than 50 miles per hour in the spring. These conditions rapidly disperse air pollutants in the region.

Environmental Impacts

Dust levels resulting from allotment management activities would be slightly higher under the Proposed Action than Alternative B. The cumulative impact on air quality from the allotment would be negligible compared to all pollution sources in the region.

IV. CUMULATIVE IMPACTS

A cumulative impact is defined as "the impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (Federal or non-Federal) or person undertakes such other actions. Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time" (40 CFR 1508.7).

The analysis of cumulative impacts is driven by major resource issues. The action considered in this environmental assessment (EA) is the authorization of livestock grazing on Allotment 62083, and the major issues include:

(1) threatened and endangered species associated with the Pecos River, primarily the Pecos bluntnose shiner,

(2) Pecos River water quality, and

(3) riparian/wetland habitat within the Pecos River floodplain.

The incremental impact of issuing a grazing permit on these resources must be analyzed in the context of impacts from other actions. Other BLM actions that could have impacts on the

identified resources include: livestock authorization on other allotments along the Pecos River; oil and gas activities on the river floodplain and on the uplands; rights-of way crossing the river; and recreation use, particularly off-highway vehicles.

All authorized activities which occur on BLM land can also take place on state and private lands. In addition, significant impacts could result from reservoir management and the manipulation of river flows, and agricultural activities (e.g. feedlots, crop production, and irrigation diversions and return flows).

Many of the actions which could contribute to cumulative impacts have occurred over many years. Impacts from open-range livestock grazing in the last century are still being addressed today. Sumner Dam, the principal structure controlling river flows in this reach, was built in 1937. Major irrigation projects were begun in the 19th century, and oil and gas activities began in the early part of the 20th century. All these activities are still occurring today, and are expected to continue into the foreseeable future to some degree.
The Proposed Action would not add incrementally to the cumulative impacts to threatened and endangered species, or to Pecos River water quality. The conclusion that impacts to these resources from grazing authorization would not be significant are discussed in detail in Section III of the EA. Incremental impacts to riparian/wetland habitat from livestock grazing are possible, however. These impacts are also discussed in Section III of the EA.

If the No-Grazing Alternative were chosen, some adverse cumulative impacts to riparian/wetland habitat would be eliminated, but others would occur. Grazing would no longer be available as a vegetation management tool, and BLM lands within the allotment would be less intensively managed. For example, alkali sacaton in the bottomlands would likely become decadent without livestock impact, and control of exotic plant species such as saltcedar would be less likely without allotment management.

V. MITIGATION MEASURES

Mitigation measures are actions which could be taken to avoid or reduce impacts likely to result from the Proposed action or Alternatives. The following mitigation measures address possible impacts from livestock grazing under the Proposed Action.

Vegetation monitoring studies and riparian assessments would continue if a new grazing permit were issued under the Proposed Action. Changes to livestock management would be made if monitoring data show that adverse impacts to upland or riparian vegetation are occurring.

It is possible that unforeseen impacts to other resources could occur during the term of the permit. If adverse environmental impacts are observed, action would be taken to mitigate those impacts at that time.

VI. RESIDUAL IMPACTS

Residual impacts are direct, indirect, or cumulative impacts that would remain after applying the mitigation measures. Residual impacts following authorization of livestock grazing would be insignificant if the mitigation measures are properly applied.

VII. **PERSONS OR AGENCIES CONSULTED**

Chaves County Public Land Use Advisory Committee
Mr.Gerald Don Cortese - Permittee
Forest Guardians
New Mexico Department of Game and Fish
New Mexico Energy, Minerals, and Natural Resources Department
- Forestry and Resource Conservation Division
New Mexico Environment Department - Surface Water Quality Bureau
New Mexico State Land Office
U.S. Fish and Wildlife Service - Ecological Services
U.S. Fish and Wildlife Service - Fishery Resources Office

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